

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A method for stripping ammonia from anaerobically digested liquid waste, comprising:

(a) anaerobically digesting liquid waste into digested liquid waste containing ammonia and carbon dioxide;

(b) stripping carbon dioxide from the digested liquid waste and lowering the pH of the digested liquid waste;

(c) stripping ammonia from the digested liquid waste; and

(d) converting stripped ammonia into nitrogen-containing compounds in a biofilter.

2. The method of Claim 1, wherein air heated to a temperature above the ambient air temperature is used to strip the carbon dioxide and ammonia.

3. The method of Claim 1, further comprising collecting methane from anaerobically digesting liquid waste, and generating power from burning the methane.

4. The method of Claim 3, further comprising collecting heated air surrounding power generation equipment and stripping the carbon dioxide and ammonia with the heated air.

5. The method of Claim 4, wherein the temperature of the heated air is about 80°F to about 110°F.

6. The method of Claim 1, comprising stripping the carbon dioxide and the ammonia with steam.

7. The method of Claim 1, comprising stripping the carbon dioxide and ammonia with heated air that is heated in a heat exchanger that uses hot water, steam, or combustion gas as the heating medium.

8. The method of Claim 7, wherein said heated air temperature is greater than 200°F.

9. The method of Claim 1, further comprising adding an alkaline chemical to the digested liquid waste that raises the pH of the digested liquid waste.

10. The method of Claim 1, comprising stripping the carbon dioxide and ammonia with heated air that is heated in a boiler, generator; or fuel cell.

11. A method for removing hydrogen sulfide from anaerobically digested liquid waste, comprising:

(a) anaerobically digesting liquid waste into digested liquid waste containing hydrogen sulfide;

(b) stripping hydrogen sulfide from digested liquid with gas that lowers the pH of the digested liquid waste; and

(c) converting stripped hydrogen sulfide into sulfur-containing compounds in a biofilter.

12. The method of Claim 11, further comprising collecting methane from anaerobically digesting liquid waste, burning methane, and stripping hydrogen sulfide with combustion gas from burning the methane.

13. The method of Claim 12, further comprising generating power from burning methane.

14. The method of Claim 11, wherein said gas is combustion gas.

15. The method of Claim 14, wherein the combustion gas temperature is greater than 250°F.

16. The method of Claim 11, wherein the gas has a carbon dioxide content greater than 30% by volume.

17. The method of Claim 11, wherein the gas has a carbon dioxide content greater than 30% by volume and an oxygen content greater than 5% by volume.

18. The method of Claim 11, further comprising adding an acidic chemical to said digested liquid waste to lower the pH of the digested liquid waste.

19. The method of Claim 11, wherein the acidic chemical is an organic or inorganic acid.

20. A method for removing ammonia and hydrogen sulfide from anaerobically digested liquid waste, comprising:

(a) anaerobically digesting liquid waste into digested liquid waste containing ammonia, hydrogen sulfide, and carbon dioxide;

(b) stripping hydrogen sulfide with a first gas and lowering the pH of the digested liquid waste;

(c) stripping carbon dioxide with a second gas and raising the pH of the digested liquid waste;

(d) stripping ammonia with the second gas;

(e) converting stripped hydrogen sulfide into sulfur-containing compounds in a biofilter; and

(f) converting stripped ammonia into nitrogen-containing compounds in the biofilter.

21. The method of Claim 20, further comprising collecting methane from anaerobically digesting liquid waste, burning methane, and stripping hydrogen sulfide with combustion gas from burning the methane.

22. The method of Claim 21, further comprising generating power from burning methane.

23. The method of Claim 21, wherein the first gas is combustion gas.

24. The method of Claim 23, wherein the combustion gas temperature is greater than 250°F.

25. The method of Claim 20, wherein the first gas has a carbon dioxide content greater than 30% by volume.

26. The method of Claim 20, wherein the first gas has a carbon dioxide content greater than 30% by volume and an oxygen content greater than 5% by volume.

27. The method of Claim 20, further comprising adding an acidic chemical to said digested liquid waste to lower the pH of the digested liquid waste for stripping the hydrogen sulfide.

28. The method of Claim 20, wherein the acidic chemical is an organic or inorganic acid.

29. The method of Claim 20, wherein the second gas is air heated to a temperature above the ambient air temperature.

30. The method of Claim 20, further comprising collecting methane from anaerobically digesting liquid waste, and generating power from burning the methane.

31. The method of Claim 30, further comprising collecting heated air surrounding power generation equipment and stripping the carbon dioxide and ammonia with the heated air.

32. The method of Claim 31, wherein the temperature of the heated air is about 80°F to about 110°F.

33. The method of Claim 20, comprising stripping the carbon dioxide and the ammonia with steam.

34. The method of Claim 20, comprising stripping the carbon dioxide and ammonia with heated air that is heated in a heat exchanger that uses hot water, steam, or combustion gas as the heating medium.

35. The method of Claim 34, wherein said heated air temperature is greater than 200°F.

36. The method of Claim 20, further comprising adding an alkaline chemical to the digested liquid waste that raises the pH of the digested liquid waste to strip the ammonia.

37. The method of Claim 20, comprising stripping the carbon dioxide and ammonia with heated air that is heated in a boiler, generator, or fuel cell.